UNITED NATIONS

EP

Governing Council of the United Nations Environment Programme

Distr.
GENERAL

UNEP/GCSS.VI/6/Add.1
27 April 2000

ORIGINAL: ENGLISH

Sixth special session
Malmö, 29-31 May 2000
Item 7 of the provisional agenda*

GLOBAL MINISTERIAL ENVIRONMENT FORUM

ACTIVITIES OF THE UNITED NATIONS ENVIRONMENT PROGRAMME

Addendum

Water policy and strategy of the United Nations Environment Programme

Report of the Executive Director

Summary

The Executive Director of United Nations Environment Programme (UNEP) has the honour to transmit to the sixth special session of the Governing Council, in the annex to the present document, the water policy and strategy of UNEP, submitted in support of the consideration of item 7 of the provisional agenda. The document is provided as submitted by the secretariat of the Governing Council and has not been formally edited.

* UNEP/GCSS.VI/1.

030500

K0000064 020500

/...

For reasons of economy, this document is printed in a limited number. Delegates are kindly requested to bring their copies to meetings and not to request additional copies.

Annex

UNITED NATIONS ENVIRONMENT PROGRAMME

WATER POLICY AND STRATEGY

/...

Foreword 4
Key and emerging issues related to water 5
Mandate and role of UNEP 8
UNEP water policy and strategy 10
Goals 10
Focal areas 10
Expected Outputs 10
Key components of the UNEP water policy and strategy 11
1: Assessing Global Water Resources 11
GIWA 12
Mandate, Objectives and Role 12
Work Plan and Strategy 13
Expected Output 13
Other assessment activities 14
2: Managing Global Water Resources 14
Regional Seas 14
Mandate, Objectives and Role 15
Work Plan and Strategy 15
Expected Outputs 16
The Global Programme of Action (GPA) 16
Mandate, Objective and Role 17
Work Plan and Strategy 18
Expected Outputs 19
Freshwater 20
Mandate, Objective and Role 20
Work Plan and Strategy 21
Expected Outputs 22
Major Tools for Managing Global Water Issues 22
3: Co-ordinating and Mobilising Actions 25
Monitoring and Evaluating UNEP Water Policy 28

The centrality of water in our lives – social, economic, political and spiritual – cannot be overestimated. Water has been a major factor in the rise and fall of civilisations. It has been a source of conflict and tension between nations. Its quality reveals everything, right or wrong, that we do within our ecosystems. Water is an indicator of poverty and social development. Nearly every decision we make is directly linked to the use of our water resources. In short, water is life.

FOREWORD

Over the last quarter-century, we have become increasingly aware that the resources on which we rely are not boundless. The world's dependence on fossil fuels has focused the minds of many on the finite nature of our resource base. However, something much greater than the energy crisis faces us: the depletion and pollution of the planet's limited supply of fresh water.

Unlike the energy crisis, the water crisis is life-threatening. Unlike oil, fresh water has no viable substitute. Its depletion in quantity and quality has profound social, economic and ecological effects. Water is a particularly vital resource. Without water, ecosystems are destroyed. Economic activities halt. People die

The centrality of water in our lives– social, economic, political and spiritual– cannot be overestimated. Nearly every decision we make is directly linked to the use and availability of water. Water quality reveals everything, right or wrong, that we do. Its abundance is an indicator of social development. Its lack is an indicator of poverty

According to UNEP's Global Environment Outlook 2000 report, global fresh water consumption rose six-fold between 1900 and 1995– more than twice the rate of population growth. Water resources are being used faster than they are being replenished. The same resources are also often subject to pollution, further restricting their use

Increasingly, people lack access to enough water to keep them healthy and support them economically. As we enter the 21st century, one-third of the world's people live in countries with moderate to high water stress. If current consumption patterns continue, two out of every three people on Earth will live in water-stressed conditions by 2025. Already, more than 5 million people die every year as a result of poor water quality– ten times the number killed in wars. More than half the victims are children. In short, water is life

Water-related problems have been recognised as the most immediate and serious threat to humankind for some years now– as reflected by the number of organisations, initiatives and conferences attempting to address this threat. But not nearly enough progress has been made. More emphasis must be put on management and coordination to address the identified problems. International agencies, inter-governmental organisations, national governments, donors and the private sector must all work better together. Water has to be used in an environmentally sustainable manner in order to maximise its economic and social benefits. It should not be used faster than it is replenished, nor should it be polluted

Addressing water problems requires an inter-sectoral approach that recognises the interlinkages– for example between land and water, agriculture and water, technology and water, health and water– that affect water management. No single mechanism or approach will be enough. Policy packages using a mutually reinforcing mix of institutional and policy reform, and legal, economic and management instruments will be needed.

The new UNEP water policy and strategy– which itself is part of a broader restructuring of UNEP that has taken the organisation away from sectoral approaches– recognises this need. At its core lie three components: assessment, management and coordination of actions. All three components stress the cross-sectoral nature of water issues. UNEP has long been involved in the field of fresh and marine water and has developed a number of programmes over the years. These, updated and revitalised, are being combined with newer programmes, such as the Global International Waters Assessment (GIWA) and Global Programme of Action to Protect Marine Environment From Land-Based Activities (GPA), to produce an integrated, comprehensive and dynamic approach to priority water issues

One of the goals of the new UNEP water policy and strategy will be to identify and promote the tools that will address the critical water issues facing humanity. Many already exist. New technologies and water demand management can improve efficiency in irrigation and encourage cleaner production in industry. The harmonisation of water policies with land and forestry policies can improve soil and water conservation and halt land degradation. International co-operation, especially among countries sharing water resources, can address the transboundary nature of many water issues.

Other tools still need developing. A central UNEP concern is to promote a "fair share" water strategy at national, subregional and regional levels. The strategy calls for a fair share for the poor; a fair share among competing uses; a fair share for local communities, and for women and children. There must be a fair share, too, for the environment. Instead of seeing the environment as a competitor for water, we must recognise its role as the mother of our most vital resource.

UNEP's experience in dealing with environmental problems, combined with the strategic direction provided by the UNEP Governing Council, the Nairobi Declaration and Agenda 21, mean that the new UNEP water policy and strategy can make a significant contribution to the quest for solutions to these issues. The water problems confronting us at the start of the 21st century can be solved. But we must have the will to deal with long-term environmental problems. We must be willi
ng to invest in our future.

Signed
Dr. Klaus Töpfer
Executive Director, UNEP

"It is no accident that the two longest chapters in Agenda 21 deal with rivers and seas. The Earth Summit might well have been called a 'Water Summit' as our planet is 70 per cent water and it is water, or the lack of it, which will cause many problems in the twenty-first century."
Rescue Mission Planet Earth,
by the children of the world.

KEY AND EMERGING ISSUES RELATED TO WATER

Although much effort has been expended by many governments, international and national organisations and agencies in attempting to address priority water-related problems, the recent report in the UNEP Global Environment Outlook series GEO-2000 shows the gaps and weaknesses in these efforts.

In GEO-2000, leading scientists around the world identified major problem areas as: freshwater stress and scarcity (including water conflicts), poor freshwater quality, coastal and marine pollution, habitat degradation, overfishing, inadequate protection of aquatic biodiversity, and the degradation of coastal areas.

It is obvious that UNEP alone cannot address all freshwater, coastal and marine environment problems. Nor can any single United Nations organisation or government. It will require serious co-ordination and collaboration among all relevant parties, each capitalising on its comparative advantage. These relevant parties include all UN organisations, river basin management agencies, multilateral and bilateral donors, national governments and water management institutions.

Freshwater problems centre on two key issues: quantity and quality. Issues of quantity involve both shortage (drought and overuse) and excess (floods), which both affect, and are affected by, environmental management. The magnitude and severity of these problems varies from region to region and between years. The global trend, however, is towards a decrease in freshwater availability for both human uses and the environment, caused by increasing demand, demand that reflects population growth, technological factors and increased economic activity. Moreover, it is characterised by increasing competition for available water within and between countries.

Issues of quality concern the pollution of water bodies such that the use of such bodies is restricted. Typical problems include sickness in human populations and ecosystem damage. Such ecosystem damage often results in a combination of negative environmental, economic and social impacts.

Food production places a high demand on water. Between 70 and 80 per cent of current water withdrawals are for irrigation About 85 per cent of water used in agricultural irrigation is wasted.The diversion of an ever-larger proportion of the world's surface and ground water resources to human use is resulting in severe environmental problems, including increased desertification, land degradation, loss of soil fertility and loss of productive wetland, flood plains and aquatic habitats.

Recent estimates suggest that 25 per cent of arable land is affected by human-induced soil degradation of which 60 per cent is from water erosion, 22 per cent by wind, 14 per cent by nutrient losses, and 4 per cent by salinization. Poor land-use practices result in enhanced sediment loads and nutrient inputs causing degradation of freshwater and coastal aquatic habitats and ecosystems. Most of the 800 million people currently suffering food shortages live in the water-scarce regions of the world. If current trends continue, food aid in terms of subsidised or free food might have to increase 20 times over current levels. Regional water scarcity will thus have far-reaching consequences on a global scale.

Increasing numbers of small island developing states (SIDS) are facing water scarcity. Drought, sea-level rise and natural disasters such as cyclones, hurricanes, volcanoes and earthquakes have a profound impact on water in SIDS. In addititon, the economies of many SIDS are dominated by agriculture and tourism. The former causes degradation of water resources by agro-chemicals; the latter uses inordinate quantities of water. Land-based sources of pollution and wastewater discharges from hotels, which are increasingly in the 1,000-room range, are despoiling the reefs and oceans on which these islands' economies significantly depend.

Increased urbanisation has stressed water use and water supply infrastructure beyond capacity, especially in the larger cities of the developing world. Megacities have to cope with intense competition from agriculture and industry to provide their expanding populations, especially the urban poor, with adequate water supply. The problem of a shortage of clean water in large cities has heightened the issue of the allocation of water between agriculture and domestic consumers, not just in terms of water itself but also in terms of the funds invested to supply water. Megacities also have to address the increasing pollution of their freshwater sources from growing volumes of urban waste and the increasing environmental risks from over-abstraction of groundwater resources, inadequate drainage and floods.

Increasingly, water-related environmental problems are becoming transboundary in scope as local pollution problems spread across borders due to the pressure of population growth, increased fertiliser and pesticide use, more industries and inadequate pollution controls. In addition, long-range transport mechanisms contaminate water bodies at a distance from the source and subsidised and over-capitalised fishing fleets chase declining stocks of transboundary and migratory fish stocks. Water-supply problems relating to both quantity and quality have been, and continue to be, a source of international tension, while at the national level conflicts are increasingly apparent between economic sectors due to conflicting requirements for urban, industrial, rural and agricultural uses.

There are three priority marine-related issues and problems. One is over-fishing and the use of destructive fishing gear. The second is the loss and degradation of highly productive ecosystems in the transition zone between land and ocean (due to increasing ribbon development of coastlines). The third is declining coastal water quality, resulting from increased rates of contaminants discharged directly and indirectly via surface and groundwater.

The environmental problems of the oceans and coastal areas stem in large part from land-based activities and the long-distance transport of contaminants by atmospheric and biological processes, with the consequence that no part of the ocean is immune from human impacts. Some 80 per cent of pollution loads in the ocean originate from land-based activities. These include municipal, industrial and agricultural waste and run-off, and atmospheric deposition. These contaminants affect the most productive areas of the marine environment– estuaries and near-shore coastal waters.

The marine environment is also threatened by physical alterations of the coastal zone, including destruction of habitats of vital importance in maintaining marine ecosystems. These issues underscore the need to recognise the linkages in integrated approaches to river basins, coastal and marine

environment management. Integrated coastal area management includes physical planning and the sustainable development of coastal areas, while preventing the environmental degradation of coastal ecosystems.

The cross-sectoral nature of the consequences of unsustainable water use highlight the interlinkages and dependencies between different activities and sectors. For example, unsustainable water use has negative implications for food production, human health and biodiversity. While some perceive a conflict between environmental protection and human use, without environmentally sustainable water use, the quantity and quality of the resource itself is degraded and the economic and social benefits of water are reduced or lost.

The Mandate, Objectives and Role of UNEP

The relevant resolutions of the United Nations General Assembly, the decisions of the UNEP Governing Council and the Nairobi Declaration, which refocused the role and policy mandate of UNEP, provide the key components of the legislative authority for the development of the UNEP water policy and strategy. The mandate also derives from the decisions of the Nineteenth and Twentieth Sessions of the UNEP Governing Council, which accorded particular attention to the review of the role of UNEP in freshwater, coastal and marine issues.

The decisions and recommendations of the 1972 Stockholm Conference on the Human Environment and the 1992 United Nations Conference on Environment and Development have also significantly inspired UNEP water policy and strategy.

Most UNEP activities relevant to the environmental management of freshwater, marine and coastal issues that predate the adoption of Agenda 21 were recognised and endorsed by the Earth Summit as contributing to the implementation of Agenda 21. In chapters 17 and 18 of Agenda 21, specific priorities for action are outlined for the management of freshwater, marine and coastal resources. These priorities have guided the development of the UNEP water policy and strategy.

As emphasised in chapter 38 of Agenda 21, a key objective to be pursued by UNEP within the United Nations system is the provision of policy guidance and co-ordination in the field of the environment. This entails the major responsibility of facilitating the integration of the environmental aspects of social and economic development into policy discussions involving freshwater issues. In pursuit of this goal, UNEP accords high priority in its activities to the protection, conservation and more efficient use of freshwater resources, both for human survival and for the maintenance and protection of ecosystems of value to humans.

Building on and consistent with the Nairobi Declaration on the role and mandate of UNEP and the decisions of the Twentieth Session of the United Nations Environment Programme (UNEP) Governing Council, the strategic approaches include:

- Filling the information and knowledge gap on critical freshwater, coastal and marine issues through a more comprehensive assessment process.

- Providing fora for inter-governmental policy dialogue and information exchange on issues relating to freshwater and the coastal and marine environment.
- Monitoring, reviewing and analysing policy responses to existing and emerging freshwater, coastal and marine issues.
- Identifying and promoting the use of appropriate integrated policy measures in tackling the root causes of major freshwater, coastal and marine environmental concerns.
- Stimulating co-operative actions to respond to the increasing challenges of improving the quality and quantity of available freshwater and protecting the coastal and marine environment.
- Strengthening consultations, co-ordinating, networking and promoting dialogue with various stakeholders.

CHAPTERS 17 AND 18 OF AGENDA 21, ADOPTED IN RIO DE JANEIRO IN 1992

Chapter 17 of Agenda 21, under the title: Protection of the oceans, all kinds of seas, including enclosed and semi-enclosed seas and coastal areas, and the protection, rational use and development of their living resources proposed the following programme areas:

(a) Integrated management and sustainable development of coastal and marine areas, including exclusive economic zones.
(b) Marine environmental protection.
(c) Sustainable use and conservation of marine living resources of the high seas.
(d) Sustainable use and conservation of marine living resources under national jurisdiction.
(e) Addressing critical uncertainties for the management of the marine environment and climate change.
(f) Strengthening international, including regional, co-operation and co-ordination.
(g) Sustainable development of small islands.

Chapter 18 of Agenda 21, under the title: Protection of the quality and supply of freshwater resources: Application of integrated approaches to the development, management and use of water resources, proposed the following programme areas for the freshwater sector:

a) Integrated water resources development and management.
b) Water resources assessment.
c) Protection of water resources, water quality and aquatic ecosystems.
d) Drinking-water supply and sanitation.
e) Water and sustainable urban development.
f) Water and sustainable food production and rural development.
g) Impacts of climate change on water resources.

UNEP Water Policy And Strategy

In response to the growing recognition of the potential severity of water-related environmental problems worldwide, the UNEP water policy and strategy will place considerable emphasis on addressing these problems in a holistic, integrated and co-ordinated manner.

At the same time, UNEP recognises that it cannot effectively and fully address all water issues. It has to focus and concentrate on selected targets and integrate its environment work with the work of other international organisations, governments and the private sector, to ensure holistic approaches and effective sustainable outcomes. It will also work with these partners to encourage the improved co-ordination of efforts to address water problems.

UNEP Water Policy and Strategy: Goals

- Achieving greater global understanding of freshwater, coastal and marineenvironments by conducting environmental assessments in priority areas. Raising awareness of the importance and consequences of unsustainable water use.
- Adoption of the integrated management of freshwater systems and their related coastal and marine environments.
- Preparation of integrated management plans and programmes for aquatic environmental 'hot- spots', based on the assessment results.
- Implementation of integrated management plans, programmes and legalframeworks, for surface and groundwater management through the exchange of information, technical training and resource mobilisation.
- Adoption of precautionary, preventive and anticipatory approaches.

UNEP Water Policy and Strategy: Focal Areas

- Freshwater scarcity and water conflicts between human activities and aquatic ecosystems.
- Land-based sources of pollution and alteration of habitats, and their impacts on aquatic ecosystems.
- Aquatic biodiversity, its services, the benefits of ecosystem functioning, and their relationship with fisheries and aquaculture.
- Resource use and management planning in harmony with economic and social development.
- Knowledge and technology transfer in integrated water management.

UNEP Water Policy and Strategy: Expected Outputs

- Global assessments of major priority aquatic ecosystems (river and lake basins, large marine ecosystems, aquifers), in order to develop policy responses.
- Provision of environmental data for global assessment in co-operation with other organisations.

- Diagnosis of priority freshwater environmental problems and their underlying causes.
- Forecasting of freshwater scarcities and the development of guidelines for the equitable sharing of freshwater resources;
- Development of environmental management strategies and tools for land-based activities that affect the coastal and marine environment;
- Transmission of guidelines and programmatic approaches to existing regional mechanisms for the environmental assessment and management of freshwater, coastal and marine resources (to be implemented through the regional seas programme and river basin management programmes and agencies).
- Evaluation and promotion of environmentally sound technologies and practices.
- Greater awareness of the importance and consequences of unsustainable water use.
- Assessment and development of policies, guidelines and management tools for environmentally sustainable integrated water management, plus the implementation of pilot projects to demonstrate their use.
- Recommendations for remedial and mitigation actions to address water problems, including emergencies.
- Fostering and development of new and innovative approaches and mechanisms for assessing and managing the aquatic environment and its associated resources.

UNEP WATER POLICY AND STRATEGY: KEY COMPONENTS

The key components of the UNEP water policy and strategy are assessment, management and co-ordination activities.

ASSESSING GLOBAL WATER RESOURCES

The Global International Waters Assessment

The main purpose of assessment is to provide information and analysis to help identify priorities and enable appropriate policy responses to address the issues identified. The main framework for UNEP assessment activities is the Global International Waters Assessment (GIWA).

The lack of a comprehensive assessment of transboundary and other water bodies, both marine and freshwater, has been a unique and serious impediment to the implementation of agreed actions. At present, there is no firm basis on which to identify areas of global priority for intervention. Furthermore, many actions aimed at resolving environmental problems have failed to identify the geographical boundaries and their social root causes.

Existing assessment-related activities, such as those under the water programme of the Global Environment Monitoring System (GEMS/Water), will continue to provide information and data that will be used in the GIWA process. In addition, UNEP will review the structure of GEMS/Water with a view to aligning it more directly with current priorities and emerging issues GIWA will make use of the regional seas networks and its expert groups

dealing with marine pollution assessment. The outputs of GIWA will then be used to strengthen priority setting within the implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities and in the revitalisation of the regional seas conventions and action plans.

KEY POINTS OF GIWA

GIWA concentrates on topics of critical importance to the international community, comprising 22 issues grouped into 5 major areas of concern (freshwater shortages; pollution; habitat and community modification; unsustainable exploitation of fisheries and other living resources, and global change). GIWA has a broad geographical scope, covering 66 geographical units of assessment, grouped into nine mega-regions for management purposes.

GIWA adopts a holistic approach, involving political, economic and social considerations as well as environmental concerns. With funding provided by GEF and partners, GIWA is a complement to the UNEP water programme. Its four-year initial funding guarantees its sustainability in the medium term. The development, in the intervening period, of a sustainable financing strategy will secure the long-term future needs of GIWA.

GIWA: Mandate, Objectives and Role

GIWA is executed by UNEP, with the support of the implementing agencies of the Global Environment Facility (GEF) and other partners and stakeholders. GIWA makes full use of existing assessments and all other available information to avoid duplication of work. Co-operation with and linkages to all relevant international and national organisations are being established.

The ultimate goal of GIWA is to provide governments, decision-makers and funding agencies with a quantitative, scientifically accurate identification and assessment of water-related issues in subregions around the world. This will facilitate the identification of priorities by GEF and its partners for remedial and mitigatory actions in international transboundary and other water bodies, thus enabling countries to manage their water resources in a sustainable manner.

Other aims include the following:

- Serving as an effective mechanism for the exchange of all water-related information generated through the various activities of governments, the United Nations and its specialised agencies and other organisations.
- Facilitating the provision of expert inputs in terms of assessment, policies and strategies.
- Bridging the traditional separation between freshwater and seawater assessments, hence the focus on marine areas and their freshwater drainage basins.
- Providing basic and currently unavailable information to policy makers, managers and the public, to help foster a greater understanding of the severity of environmental problems in international waters, their social causes and the options available for solving them.

GIWA: Work Plan and Strategy

GIWA is being implemented in four phases. Phase one covers the development of the GIWA methodology and entails the establishment of the GIWA network consisting of national experts and institutions, regional and global collaborating bodies, GIWA co-ordinators (focal points and task teams), etc., organised around the 66 geographical units of assessment (sub-regions) and nine major regions (mega-regions).

GLOBAL ENVIRONMENT FACILITY

The Global Environment Facility (GEF) is an international financing entity, of which UNEP is one of the implementing agencies. GEF, which was established in 1991, is designed to meet the incremental costs of achieving global environmental benefits. GEF is the most significant source of international funding to assist countries in addressing the degradation of aquifers, basins, lakes, oceans, rivers and wetlands of international significance. International waters have been designated as one of the four focal areas of GEF, for which GIWA will provide crucial information.

GEF is co-funding GIWA in partnership with the Governments of Finland and Sweden, the United States National Oceanic and Atmospheric Administration (NOAA), the Municipality and University of Kalmar and UNEP.

UNEP is also currently undertaking a GEF-funded assessment of the damages and threats to the environment caused by persistent toxic substances. This regionally based assessment will evaluate priorities for intervention and will support the persistent organic pollutants (POPs) negotiations. This assessment is complementary to, and supportive of GIWA.

Phase two (the analytical phase) involves gathering and analysing the information necessary for applying the GIWA Assessment Protocol at the subregional level.

Phase three (the predictive and policy options analysis phase) comprises work on scenario development and policy options analysis.

Phase four (the dissemination phase) concentrates on the preparation and dissemination of the global and regional GIWA products, such as reports, reviews, databases, etc., that are easily comprehensible to various sectors of society.

GIWA: Expected Outputs

The main aoutputs of GIWA will include the Global International Waters Assessment itself, a comprehensive report comparable to the global assessments on biodiversity, climate change and the stratospheric ozone layer.

Other outputs will include the following:

- A GIWA Assessment Protocol, including an agreed methodology for conducting causal chain analyses to examine social causes of water-related environmental problems.
- A methodology for making diagnostic analyses at the regional scale.
- Sixty-six subregional and nine mega-regional reviews of the ecological status of transboundary and other waters, as well as major water-related issues, including analyses of their social causes.
- Megaregional and subregional scenarios for the future state of international waters, based on planning boundaries, trends and rates of changes in industrialisation, population growth and development.
- A global analysis of the social causes of identified major environmental water-related concerns, principal issues and effective policy responses.

Other Assessment Activities

UNEP is currently engaged in several water-related assessment activities. These include, the water component of the Global Environment Monitoring System (GEMS/Water) and regional assessments of the impacts of land-based activities in support of the implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities.

GEMS/Water is the only global freshwater water-quality monitoring and assessment programme within the United Nations system. GIWA needs water quality data for its comprehensive assessment purposes and the data GEMS/Water collects are relevant to the GIWA assessments. The issues of how to obtain better spatial coverage and the selection of parameters included in the global GEMS/Water database are under review in light of the requirements of GIWA and GPA.

UNEP is working to ensure that all freshwater monitoring and assessment efforts are integrated and co-ordinated, so as to meet the overall goals of GIWA.

MANAGING GLOBAL WATER RESOURCES

The Regional Seas Programme

The UNEP Regional Seas Programme was created in 1974 as a global programme implemented through regional components. It includes 14 regions worldwide, with more than 140 coastal states and territories participating. Based on periodically revised action plans adopted by high-level intergovernmental meetings, the regional seas conventions and action plans are implemented, in most cases, within the framework of legally binding regional conventions, under the authority of the respective contracting parties or intergovernmental meetings.

These regional agreements, conventions and their related protocols as well as action plans have been most effective in engaging governments in protecting the coastal and marine environment. They provide a comprehensive coverage of issues ranging from chemical wastes and integrated approaches to the management of coastal areas, to the conservation and management of marine

living resources and ecosystems. In July 1999, in response to the recommendations of governments for the revitalisation of the regional seas programme, UNEP organised the Second Global Meeting of Regional Seas Conventions which agreed on a series of measures for strengthening these instruments

Regional Seas Programme: Mandate, Objectives and Role

The mandate for UNEP to deal with oceans and coastal areas lies in the relevant decisions of the 1972 Stockholm Conference on the Human Environment and the 1992 United Nations Conference on Environment and Development. The policy framework for its work in this field is contained in Governing Council decision 20/19A. Of paramount importance in this decision was the call for UNEP to strengthen the regional seas conventions and action plans as the central mechanism for the implementation of activities pertaining to Chapter 17 of Agenda 21. In furtherance of this goal, UNEP is undertaking a series of measures reflected in GC decision 20/18B on environmental conventions. UNEP also is promoting and facilitating collaboration between regional seas conventions and action plans and relevant global environmental conventions and agreements in areas of common concern.

The overarching objectives of the regional seas conventions and action plans include:

- The promotion of integrated management and sustainable development of coastal areas and associated river basins and their living aquatic resources.
- The promotion of the implementation of appropriate technical, institutional, administrative and legal measures for the improved protection of the coastal and marine environment.
- Facilitating the assessments of the coastal and marine environment including their conditions and trends.

The regional seas conventions and action plans are action-oriented programmes that focus not only on the mitigation or elimination of the consequences, but also on the causes of environmental degradation. A comprehensive, integrated, results-oriented approach is adopted to combat environmental problems through the rational management of marine and coastal areas.

Regional Seas Programme: Workplan and Strategy

The Governing Council of UNEP has called for the revitalisation and strengthening of the regional seas conventions and action plans. UNEP water policy and strategy provides a framework for achieving these objectives.

First, UNEP provides strategic programmatic support to the work plans of regional seas conventions and action plans, particularly where they interface with the priorities of the UNEP programme of work. To this end, the regional seas programmes are expected to play a key role in the implementation of GIWA, the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) ; the Programme of Action for

small island developing states (SIDS) and the International Coral Reef Initiative (ICRI). Special attention is being given to the strengthening of the regional seas conventions in the African region, specifically the Abidjan and Nairobi Conventions.

Second, UNEP is promoting and facilitating horizontal cooperation, or twinning, between the more developed regional seas conventions and action plans and those that are less developed.

Third, UNEP is assisting the more financially fragile regional seas programmes to explore and identify innovative funding approaches.

Regional Seas Programme: Expected Outputs

The main output is expected to be a revitalised Regional Seas Programme that takes into account the specific challenges in the respective regions.

Other envisaged outputs include:

- Revitalisation of some of the regional seas conventions to enable them become more effective.
- Strengthened linkages with the Global Programme of Action for the Protection of the Marine Environment from Land-based activities.
- Integration of the priorities of the Regional Seas Programme in the work plan of the Global International Waters Assessment project.
- Closer collaboration between the regional seas conventions and relevant global conventions.
- Promotion of horizontal co-operation between and amongst the regional seas conventions and action plans.

The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities.

The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA), which was established in 1995, is the main mechanism for concentrating UNEP management efforts in strengthening regional and national efforts to tackle what is perhaps the most important threat to the marine environment: the flow of chemicals, all forms of waste and other pollutants into the sea via the air, rivers and coastal activities.

Approximately 80 per cent of marine pollution originates from land-based activities. Of the world's six billion people, approximately 40 per cent live within 150 kilometres of the coast. Sixty per cent of cities with a population of 2.5 million or more are coastal cities. The health and well-being of coastal populations depend on the health and well-being of coastal systems, which include near-shore waters, estuaries and wetlands, and associated watersheds as well as drainage basins. Human pressure is negatively affecting these habitats through pollution and physical alteration.

With regard to the management of the coastal and marine environment, the GPA sets the goals and priorities for UNEP activities in this area (see the GPA website: http://www.gpa.unep.org). The ongoing revitalisation of the regional

seas conventions and action plans increases the effectiveness of the GPA, as regional seas provide an umbrella context for the implementation of the guidelines and other action emanating from the Global Programme of Action.

GPA: Mandate, Objective and Role

Governments adopted the GPA and the Washington Declaration in November 1995. They also designated UNEP as the secretariat. As such, the role of UNEP is, inter alia:

- To promote and facilitate the implementation of the GPA at the national, subregional and regional levels through, in particular, a revitalisation of the regional seas conventions and action plans.
- To catalyse the implementation of the GPA at the international level by, inter alia, United Nations organisations, development banks and the GEF.
- To review progress in the implementation of the GPA.
- To promote the exchange of experience between regions, particularly through the establishment and operation of the GPA clearing-house mechanism; and to consider the need for international rules, as well as recommended practices and procedures, to further GPA objectives.
- To consider the need for international rules, as well as recommended practices and procedures, to further GPA objectives.

The policy objective related to the Global Programme of Action and stated in Agenda 21, is "to prevent, reduce and control degradation of the marine environment so as to maintain and improve its life-support and productive capacities."

Agenda 21 states that, to achieve this policy objective, the following, inter alia, are required:

- Application of preventive, precautionary and anticipatory approaches.
- Prior assessment of activities that may have significant adverse impacts on the marine environment.
- Integration of the protection of the marine environment into relevant general environmental, social and economic development policies.
- Development of economic incentives.
- Application of clean technologies.
- Internalisation of environmental costs through, for example, the 'polluter pays' principle.
- Improvement of the living standards of coastal populations, particularly in developing countries.

The Global Programme of Action, which was adopted by 108 Governments, translates this overall policy objective into national, regional and global level objectives, and specifies what needs to be done to address the different pollutant source categories and physical degradation of coastal and marine ecosystems:

- At the national level, to develop comprehensive, continuing and adaptive programmes of action within the framework of integrated coastal management, harmonised with river basin management and land-use plans.
- At the regional level, to strengthen and, where necessary, create new regional co-operative arrangements and joint actions to support effective action, strategies and programmes at the national and local levels.

GPA: Work Plan and Strategy

To implement the role of UNEP as the secretariat of the Global Programme of Action, three clusters of activities will be implemented in 2000-2001. The strategy will be revised in 2001, based on the outcome of the first intergovernmental review process and meeting of the GPA. The three activity clusters are mutually supportive and part of a cyclic process:

- Analysis for action
- Mobilising action at national, regional and global levels
- Evaluation and further development of the GPA.

Analysis for action comprises two components: (i), finalising the publications emanating from the first phase of the work programme of the GPA (regional workshops of government designated experts) ; and, (ii) providing targeted analyses as a contribution to GIWA- which will in turn also benefit the GPA- and for the mobilisation of action at the national, regional and global levels.

The outputs and performance indicators will include regional overviews, a global assessment on land-based activities and a review of major marine issues; and an analysis of benefits and opportunities for action by different stakeholders and of factors contributing to successes and failures of policy, financial and economic responses.

Mobilising Action at the national, regional and global levels includes:

- Forwarding non-binding and binding agreements on land-based activities, particularly in the context of the regional seas. The non-binding agreements involve governments and the private and public sectors; binding legal agreements are in the form of treaties, protocols, etc.
- Mobilising action at the national and regional level, particularly within the framework of regional conventions and action plans. This also includes frameworks for action approved by governments; GEF projects related to the GPA; capacity-building through, inter alia, twinning within the context of the regional seas conventions and brokering funding arrangements for concrete action.
- Better global co-ordination in the implementation of the GPA to promote co-operation with all parties concerned, including the framework of the ACC subcommittees on oceans and on freshwater, the global ocean governance process and other global and regional co-ordination mechanisms, as appropriate.

GPA: Expected Outputs

The evaluation, in 2000, of the GPA will lead to its further development by taking into account developments, including new and emerging issues, since its adoption in 1995. As mentioned above, the GPA is implemented primarily by national governments. At the same time, international institutes and organisations, non-governmental organisations, convention secretariats, regional seas bodies and– it is to be hoped– the private sector, will also contribute to the implementation of the GPA.

UNEP provides the secretariat services for the implementation of the GPA by different stakeholders. Major areas of concentration include, first, developing overviews on how different stakeholders can implement the GPA and, second, the further development of the GPA. A significant opportunity for this is provided by the first intergovernmental review process and meeting, planned for 2001.

The outputs and performance indicators will include regular overviews of the implementation of the GPA by different partners and preparating for and holding the first intergovernmental GPA review meeting in 2001.

During 2000-2001, the focus of activities of the GPA Co-ordination Office will centre around the implementation of the strategic action plan on municipal wastewater, the preparation of the first review of the GPA and the development of the GPA clearing-house mechanism.

PROTOCOL TO ADDRESS POLLUTION FROM LAND-BASED SOURCES AND ACTIVITIES IN THE WIDER CARIBBEAN REGION

The Conference of Plenipotentiaries held in Aruba from 27 September to 6 October 1999, adopted the Protocol Concerning Pollution from Land-based Sources and Activities to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention). This Protocol is the first legal instrument of its kind to be developed since the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) was adopted in 1995, and represents the translation at the regional level of the principles and objectives of the GPA. The Protocol recognises the need to encourage national, sub-regional and regional action, through a national political commitment at the highest level, and international Co-operation to deal with the problems posed by pollutants entering the Convention area from land-based activities.

The Protocol is comprised of four annexes. The Contracting Parties to the Cartagena Convention agreed to address the source categories, activities and pollutants listed in Annex I through the progressive development and implementation of additional annexes for those source categories, activities and associated pollutants of concern determined by the Parties as appropriate for regional or sub-regional action. Such annexes shall, as appropriate, include effluent and emission limitations and/or management practices based on the factors identified in Annex II to the Protocol; and timetables for achieving the limits, management practices and measures agreed by the Parties.

The priority source categories and activities listed in Annex I include domestic sewage, agricultural non-point sources, chemical industries, extractive industries and mining, food processing operations, and sugar factories and distilleries. Two further annexes, addressing domestic wastewater (Annex III) and agricultural non-point sources of pollution (Annex IV), are attached to the Protocol.

The Protocol also contains provisions for, inter alia, co-operation and assistance (including capacity building), monitoring and assessment, development of information systems, education and awareness, funding and reporting.

Freshwater

The quantity, quality, demand and supply of freshwater remain critical issues as we step into the 21st century. The provision of an adequate supply of safe and clean water is regarded as the most important precondition for sustaining human life, for maintaining ecosystems that support all life, and for achieving sustainable development.

To complement the work of the GPA, and ensure comprehensive coverage of all freshwater issues, UNEP water policy specifically addresses other freshwater issues, in recognition of how growing competition for water poses major threats to social, environmental and economic security. This competition arises mainly within, and sometimes between, countries as supplies increasingly fall short of needs.

Some 260 rivers are shared by two or more countries. There is a need to promote ways of minimising conflicts between riparians and advocating the best use of water at the basin level.

As demands on freshwater increase, and in the absence of mechanisms to attain a clear consensus on how best to use finite water resources for the benefit of all, competition has the potential of erupting into acrimonious disputes. There are already many areas that could come into conflict as a result of unequal distribution or access to water.

At the Second Meeting of the High-Level Committee of Ministers and Senior Officials, governments agreed that UNEP should play a vital role in giving substantive environmental inputs in freshwater issues. At its Fifth Special Session, the UNEP Governing Council reiterated this view, directing UNEP to enhance its role in the environmental aspects of the sustainable management of freshwater.

Freshwater: Mandate, Objectives and Role

In its decision 6/1, the Commission on Sustainable Development reinforced the environmental focus of UNEP, calling upon the organisation to collaborate with other members of the ACC Subcommittee on Water Resources by providing " technical and scientific advice on environmental aspects of the sustainable development of freshwater resources." As emphasised in chapter 38 of

Agenda 21, a key objective to be pursued by UNEP within the United Nations system is the provision of policy guidance and co-ordination in the field of the environment.

As the logical follow-up to its assessment efforts, UNEP activities in integrated water management will focus on assisting governments, upon request, to address the water-related problems identified by GEO 2000, GIWA and other relevant findings. UNEP accords particular attention to identifying water-related environmental problems, namely where they occur, how serious they are and what their causes are. UNEP can also assist governments, particularly those of developing countries and countries with economies in transition, to adequately address freshwater issues by determining what can be done, who should do it and how it should be done in partnership with stakeholders.

The UNEP Governing Council has identified a range of possible issues for UNEP to consider within its environmental mandate. These include:

- Access to safe drinking water.
- Sanitation.
- Food production.
- Agricultural irrigation.
- Industrial development.
- Community participation.
- Preservation of ecosystems.
- Integrated water management.
- Co-operation on transboundary water issues (including assisting developing countries to develop their abilities to manage their water resources).
- Developing tools for monitoring and analysing water quality and quantity.
- Technology transfer.
- Institutional strengthening.

Other areas requiring attention include:

- Application of preventive, precautionary and anticipatory approaches.
- Prior assessment of activities that may have significant adverse impactsupon the freshwater environment, both surface and groundwater.
- Integration of the protection of freshwater environments and groundwater into relevant general environmental, social and economic development policies.
- Development of economic incentives.
- Development of legal regimes, including those for groundwater
- Application of clean technologies.

Freshwater: Work Plan and Strategy

The environmental aspects of freshwater resources touch on virtually all human and ecosystem needs. UNEP has an important role in assessing freshwater resources and supporting the development of practical measures in co-operation with governments to guarantee the health of the freshwater environment.

UNEP freshwater-related activities will include:

- Assessing priority freshwater environmental issues, (water quality, quantity and allocation) to maintain human lives and social and economic development, and to maintain natural ecosystems.
- Promoting the environmental dimension of freshwater management for sustainable development and stimulating international co-operative action to achieve ecologically functional freshwater systems.
- Analysing best practices in urban water management, including appropriate management and re-use of stormwater and effluent and the conservation of water supplies.
- Providing a forum for ministers and officials of member governments to share expertise and analyse mechanisms to apply best practice in all aspects of freshwater management, and determine the economic benefits provided by freshwater ecosystems.
- Assisting governments to identify effective and appropriate practices in public participation in achieving freshwater environmental management objectives.
- Developing appropriate policies and legal and economic instruments to sustain freshwater systems.
- Analysing the effectiveness of environmental management policies for freshwater.

Freshwater: Expected Outputs

- Assessments and inventories of the state of freshwater resources, which will also include the continuing identification of potential environmental hot spots.
- Reviews of regional responses to chapter 18 of Agenda 21. Assessment and development of innovative policies, strategies for sustainable freshwater use.
- Recommendations for economic and legal instruments and frameworks related to sustainable freshwater management.
- Guidelines on best practices and information on technological options for sustainable freshwater management.
- Activities to raise awareness and improve education and the participation of the general public.
- Pilot projects in key regions and cities that test the effectiveness of these policies, strategies and instruments for governments and international organisations.
- GEF International Waters Portfolio-related projects.

Major Tools for Addressing Water Issues

Technology transfer

Technology has a pivotal role to play in helping us to maintain and improve our environment. Technological skills and innovative approaches are required to reduce the generation of waste at source. Significant improvements are also necessary in waste recycling and waste treatment technologies. With

regard to agriculture, improvements are necessary in irrigation efficiency. In addition, advances in biotechnology could play an important role in producing food with less water. Alternative and less expensive sources of energy also need to be explored to reduce the cost of desalination.

Fortunately, there is an expanding environmental industry around the world capable of providing solutions rather than creating problems. UNEP supports the transfer of appropriate technology, especially in the areas of water management, and it is also providing advisory services to projects promoting cleaner production technologies. Governments in all regions have made substantial efforts to encourage industries to adopt cleaner production methods, with major successes in a number of countries.

Greater attention will be given to the use of local technologies, which are more suitable for specific situations. The identification and analysis of the costs, effectiveness and strengths and limitations of alternative technologies constitute an important step in this direction. UNEP will also conduct awareness-raising initiatives on technology development and transfer in the water sector.

Economic incentives, financial instruments and sustainable water use

As we enter the 21st century, population growth, rapid industrialisation and the emergence of megacities around the world are making additional demands on water that exceed supplies. Ironically, human water use in many places is wasteful, owing, in part, to such factors as inappropriate pricing and subsidies that encourage inefficient water use. The principle that water is an economic good to which a price is attached is becoming more widespread. But at what level should water be priced? This is a hotly debated issue, as the social aspects water– sufficient supplies for human survival, poverty reduction and health improvement– should be given overriding importance in the provision and allocation of water to the poorer parts of the world.

Experience with the application of the 'polluter pays' principle, water pricing, water utility privatisation and subsidies needs to be used to encourage the more widespread and innovative application of economic instruments for the sustainable use of freshwater resources. UNEP activities in this regard include capacity-building measures on integrated environmental and economic assessment.

A priority UNEP focus is the protection and conservation of water-related ecosystems. While humans typically allocate water supplies solely on the basis of human water needs, water-related ecosystems provide a wide range of services to humans free of charge. These services include waste assimilation, nutrient recycling, water supply, water regulation, regulation of global cycles, etc. Accordingly, destroying or otherwise debilitating these water-related ecosystems will require humans to pay for these previously free services.

UNEP and relevant partners, such as the United States Agency for International Development (USAID), Wetlands International and the World Conservation Union (IUCN), are joining forces to develop and refine the concept of ecosystem valuation, particularly with regard to transboundary water resources. This includes using such international forums as the environment and ecology component of the Global Water Partnership.

Legal Instruments and Processes

UNEP will continue to support international legal instruments, particularly with regard to refining and assisting in the implementation of regional and international legally binding agreements relating to water. It will also strengthen its role in this important area by critically examining experiences round the world to date regarding existing international agreements in water resources.

Instruments to address issues relating to water equity

The Fair Share Water Strategy– which was adopted for Africa in March 1996– is an initiative designed to ensure reasonable access and a fair share of affordable prices for water for the poor majority. UNEP is committed to ensuring its implementation by working closely with relevant organisations and sister United Nations organisations in a process of testing and applying fair-share water principles and approaches in key countries and shared water basins.

Public awareness

UNEP will undertake various public awareness, media and education activities to promote the sustainable management and use of the Earth's water resources. Policy-relevant documents on the environmental aspects of freshwater issues should be developed for use by governments to facilitate the incorporation of environmental considerations in sustainable social and economic development programmes.

Public and Private Sector Partnership

The past decade saw a great increase in public-private partnerships in the water and sanitation sector worldwide. These range from out-contracting selected activities to the complete sale of assets to the private sector. Issues such as the merits and demerits of different models of public-private partnerships, how they serve the poor, their present global use, and emerging trends remain to be explored.

Water Desalinisation

It is now technically and economically feasible to generate large volumes of water of suitable purity through the desalinisation of seawater and brackish water, and through water re-use. Plants ranging up to 270 million gallons a day have performed reliable delivery of water of high purity at progressively reduced costs.

Water Demand Management and Urban Governance

Better urban governance is crucial to water conservation. The first step is for local authorities to carry out city wide water audits. Second, policies need to be introduced to stop the pollution of water sources and to protect watersheds. Third, local authorities must use new technologies to minimise the amount of water lost through leakages. Fourth, socially sensitive pricing policies must be introduced that remove any incentive for prolifigate use.

Fifth, city authorities must involve industrialists and community groups to design innovative ways of recycling wastewater. Sixth, urban areas need integrated strategies for demand management.

Best practices

UNEP will promote the exchange and dissemination of information on sound policy responses and cost-effective technologies, as well as experiences and lessons learned at the sub-regional, regional and global levels, in the environmentally sustainable management and use of freshwater resources. This approach will encourage discussions on, and the development and application of, environmental standards and guidelines based on best-practice policy responses.

Partnerships will be strengthened with major groups as a means of drawing on the range of available expertise in identifying best practice responses to environment-related freshwater issues at all levels. Relevant groups include the Water Supply and Sanitation Collaborative Council, the World Water Council, the Global Water Partnership and regional institutions and networks and special purpose organisations such as the World Commission on Dams.

There is a need to develop environmental perspectives and to facilitate discussions on best-practice responses with regard to policy, institutional, legal and economic options for addressing the environmental aspects of critical freshwater issues. The application of environmental standards and guidelines based on best practice policy responses must also be developed and facilitated.

GLOBAL WATER RESOURCES: CO-ORDINATION, PARTNERSHIPS AND MOBILISING ACTIONS

UNEP will strategically co-ordinate and mobilise actions and partnerships at various levels. UNEP will work with governments and partners to organise regional and subregional forums on a regular basis. The objective of these meetings will be the development of a common vision and perspectives on the priority freshwater-related issues identified by UNEP Governing Council sessions. This will also enable government representatives and experts to provide policy inputs and advice on the full range of environmental and social and economic issues related to sustainable use and management of freshwater, coastal and marine resources. Such efforts could be strongly promoted through the UNEP regional offices, as well as through its existing frameworks for regional co-operation and programmes. The latter include such UNEP-supported regional arrangements as the ministerial conferences on the environment, the Regional Seas Programme and intergovernmental agreements on transboundary waters. The regional seas conventions and action plans cover 14 regions and their intergovernmental bodies co-operate directly with UNEP in the development of programmes. A number of river and lake-basin organisations also participate in integrated river basin management programmes and the International Waters Portfolio of the GEF.

With regard to Africa, UNEP will continue to support water policy development, concentrating on the experiences of countries in developing and implementing relevant water initiatives. A water strategy for Africa has been developed on that basis. In addition, UNEP is chairing the Water Working Group of the United Nations system-wide special initiative on Africa.

As the agency within the United Nations system responsible for policy guidance and co-ordination in the field of the environment, UNEP will continue to work closely with the ACC Subcommittee and its partner United Nations agencies, to ensure that the relevant environmental perspectives inherent in these measures are fully considered in intergovernmental policy discussions on freshwater resources. (The ACC Subcommittee on Water Resources was designated as the task manager responsible for reporting on the implementation of chapter 18 of Agenda 21.) UNEP will support the work of the ACC Subcommittee on Oceans and Coastal Areas. These subcommittees also perform an advisory and co-ordinating function with regard to the GPA.

At the inter-agency level, several IACSD and Commission on Sustainable Development decisions refer to the relationship between the Global Programme of Action and these subcommittees. A plan of action has been established and agreed upon with the chairs of the subcommittees to implement these decisions by April 2000. Inter-agency co-ordination is thus being ensured through existing mechanisms, as well as through the sessions of the Commission on Sustainable Development and IACSD. UNEP will also continue to collaborate with sister agencies within the framework of IACSD.

Where co-operation with selected United Nations agencies is concerned United Nations Environment Programme (UNEP) will strengthen relationships with key organisations such as the United Nations Centre for Human Settlements (UNCHS Habitat). The alliance between UNEP and UNCHS (Habitat) will be reinforced, particularly in the areas of water and sanitation and land-based sources of pollution, such as sewage. A joint UNEP/UNCHS (Habitat) water project is currently being implemented to assist African countries to establish early warning mechanisms to detect hot spots where sustainability is threatened and to help them deal with the growing ecological impacts of large cities on the continent's resources. Within the framework of the UNCHS (Habitat)/UNEP Sustainable Cities Programme, cities around the world are currently participating in the development of, inter alia, freshwater management strategies. UNEP will co-operate with the International Maritime Organisation (IMO), the Food and Agriculture Organisation of the United Nations (FAO) and IUCN, particularly with regard to the various protocols for the regional seas conventions and action plans. UNEP will also work closely with the United Nations Development Programme (UNDP) and the World Bank, within the framework of the GEF, and with the Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organisation (UNESCO), the World Meteorological Organisation (WMO) and the International Council of Scientific Unions (ICSU), in the global observing systems, and with the World Health Organisation (WHO), WMO and UNESCO, in the framework of GEMS/Water.

At the global level, UNEP will continue to forge partnerships. This will include collaborating with existing international partnerships and mechanisms such as, inter alia, the World Water Council (WWC), the World Commission on Dams and the Global Water Partnership. UNEP will also work with international financial institutions. This approach will enhance the leadership role of UNEP within the international community in efforts to address current water-related issues.

UNEP recognises the importance of forging partnerships with non-governmental organisations, the scientific community and the private sector through a participatory approach. In order to harness long-term, broad-based support on water-related issues, UNEP will take into consideration different perspectives. The enlistment of additional partners also provides for a more efficient use of resources. These mechanisms and arrangements will facilitate the implementation and periodic refinement of the UNEP water policy and strategy and also the monitoring of water-related issues. Emphasis will also be placed on the co-ordination of UNEP water-related activities at the regional level, by making maximum use of UNEP outposted offices and the regional mechanisms already in place. The role of UNEP in this regard includes fostering and brokering partnerships between governments and major stakeholders.

Within UNEP, the Division of Policy Development and Law will co-ordinate in-house meetings on water-related policy issues. In order to assist UNEP in identifying emerging water issues and to provide independent policy advice on a continuous basis, the Executive Director has established a high-level advisory board for water-related issues.

EXISTING ASSESSMENT AND MANAGEMENT PROGRAMMES AND TOOLS

Integrated water basin diagnostic and management projects. Since the 1980s UNEP has implemented a number of projects to identify problems and solutions in selected freshwater basins. These include the Lake Chad, Mekong and Zambezi basins. These projects produced reports to assist governments to integrate environmental considerations into the development and management of freshwater resources with the objective of recognising and reconciling conflicting interests.

The Water Component of the Global Environment Monitoring System (GEMS/Water) was developed by UNEP in 1978 to address the immediate freshwater monitoring and assessment data needs of governments in order to assist them to manage the quality of their water resources effectively. GEMS/Water was also designed to serve the data needs of the scientific community. Its revitalisation will lay the foundations of a system for predicting hot spots and extreme environmental events and for developing information systems to alert governments.

The Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP) was set up in 1969 with the objective of providing assessment advice on the state of marine and coastal environments. It also prepares periodic reviews of the state of the marine environment with regard to marine pollution and identifies problem areas requiring special attention. GESAMP is funded by FAO, the International Atomic Energy Agency (IAEA), IMO, the United Nations, UNEP, UNESCO, WHO and WMO.

UNEP GEF WATER PORTFOLIO

UNEP projects and activities within the GEF International Waters Portfolio are designed to complement and support UNEP mainstream water-related actions and programmes. In addition, they build upon UNEP experience and its comparative advantage in the field of environmental actions related to water. The present UNEP GEF portfolio, which has developed since 1996, comprises 19 project development facility activities and 11 full GEF projects, for a total

value of $35.5 million. Over 85 countries in GEF-eligible development regions are directly involved in one or more of these activities. It is envisaged that this portfolio will continue to grow in the immediate future in support of the implementation of the UNEP water policy.

UNEP GEF projects are intended to build upon, complement and strengthen the following:

- Regional seas conventions and action plans, including activities in the Mediterranean, South China Sea, Western Indian Ocean, and the Canary Current.
- The UNEP freshwater programme, including activities in the Bermejo, Pantanol and Volta Basins.
- Implementation of the Global Programme of Action, including activities in the Russian Arctic, Sao Francisco and San Juan river basins.
- The international chemicals agenda, including national management of potentially toxic substances; DDT phase-out in Central America, and agricultural run-off to the Caribbean Sea.
- UNEP assessment activities, including GIWA, and the regionally based assessment of potentially toxic substances.

A wide range of executing agencies are involved in UNEP GEF projects including the secretariats of the various regional seas conventions and action plans, the Organisation of American States (OAS), FAO, WHO, and major international non-governmental organisations, such as the International Geosphere Biosphere Programme (IGBP) and IUCN. UNEP anticipates further collaboration with both new and existing partners in future GEF International waters projects through the vigorous pursuit of the GEF policy to expand the range of implementing and executing agencies.

GLOBAL WATER RESOURCES: MONITORING AND EVALUATING THE UNEP WATER POLICY AND STRATEGY

Regular reviews will be carried out to gauge progress made or needed in the stated objectives under the three main components of assessment, management and co-ordination. Regional, intergovernmental and other fora will facilitate continuous and systematic reviews. Other specific reviews will also be undertaken. The GIWA Steering Committee will regularly review progress made or needed. The regional seas conventions, at their co-ordination meeting in The Hague, in July 1999, agreed that they will keep under review efforts being made to strengthen the linkages between the freshwater, coastal and marine components of their respective activities. The evaluation and further development of the GPA has begun and is expected to result in greater accomplishments.

The Twenty-first Session of the UNEP Governing Council will provide a forum for ministers to discuss modalities for strengthening UNEP's role in water-related issues.

The status of the implementation of the goals and objectives of chapter 18 Protection of the quality and supply of freshwater resources: Application of integrated approaches to the development, management and use of water

resources of Agenda 21 will be kept under review by fostering intergovernmental dialogue. The purpose is to ensure that governments and other relevant bodies and organisations inspire sound policy discussions and decisions on freshwater issues.